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PREVALENCE OF HYPOSPADIAS IN THE POPULATION OF CHILDREN IN FERGANA

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Abstract
An analysis of available approaches to the management of patients with hypospadias was carried out, as well as some controversial issues regarding diagnosis in this category of patients. As available data show, surgical treatment of hypospadias has not yet led to the restoration of aesthetic and functional components, as a result of which the optimization of surgical treatment in modern conditions continues to remain relevant the task of pediatric reconstructive plastic surgery. Attention is paid to such areas as standardization of approaches to surgical treatment of hypospadias, unification of methods of urethroplasty and correction of penile curvature. Data from clinical studies on the use of various surgical techniques are presented.

Keywords: Hypospadias, urethroplasty, penile malformation, pediatric urology, genital reconstruction.

INTRODUCTION

The aim of the study:
To study the prevalence, improve the effectiveness of prevention and surgical treatment of hypospadias based on our own innovative developments in children of the Fergana Valley.

Materials and methods:
The object of the study were 914 children with hypospadias in the Fergana Valley (in the Andijan region - 202, in the Namangan region - 467 and in the Fergana region 245) aged 0 - 18 years.

The subject of the study was venous and capillary blood, urine, analysis of subjective and objective data, assessment of risk factors, materials, digital rectal examination of the prostate gland, data from drug therapy and surgical treatment, as well as endoscopic and urodynamic equipment.

Research Methods
To achieve the goal of the dissertation and fulfill the set tasks, subjective, physical, survey, clinical, biochemical, pharmacoepidemiological, instrumental, special (digital rectal, echographic,

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transrectal ultrasound, uroflowmetric, urethrocystoscopic, surgical) and statistical methods were used.

Results and Discussion

When studying the third region of the valley, according to the prevalence of hypospadias in children, some features in the epidemiological characteristics of glans hypospadias were revealed (the results obtained are presented in Table 1 and Fig. 1).

Thus, in the population of children aged 0–18 years, the prevalence of PCH was 2.90%, and its relatively high frequency was noted in the age group of 10–14 years (25.0%). In other age groups, PCH was characterized with the following frequencies of detection: 0–1 years 0.0%, 2–4 years 2.4%, 5–9 years 2.3%, and 15–18 years 0.0%.

Comparative frequency of prevalence of various forms of glans hypospadias in children of Fergana Table No. 1

Age (years)	Prevalence of glans hypospadias							
	PCH (n=4)		DSH (n=121)		MSH (n=13)		Total CH (n=138)	
	N	%	N	%	N	%	N	%
0 – 1	**0**	0,0	**2**	50,00	**2**	50,0	4	2,9
2 – 4	**2**	2,4	**78**	91,76	**5**	5,9	85	61,6
5 – 9	**1**	2,3	**38**	88,37	**4**	9,3	43	31,2
10 – 14	**1**	25,0	**2**	50,00	**1**	25,0	4	2,9
15 -18	**0**	0,0	**1**	50,00	**1**	50,0	2	1,4
0 - 18	**4**	**2,90**	**121**	**87,68**	**13**	**9,42**	**138**	**100,00**
Statistics χ^2=20,09; Df=8; P < 0,05								

Note: • CH – capitate hypospadias;
• PCH – peri-coronal form of capitate hypospadias;
• DSH – distal stem form of capitate hypospadias;
• MSH – middle stem form of capitate hypospadias.

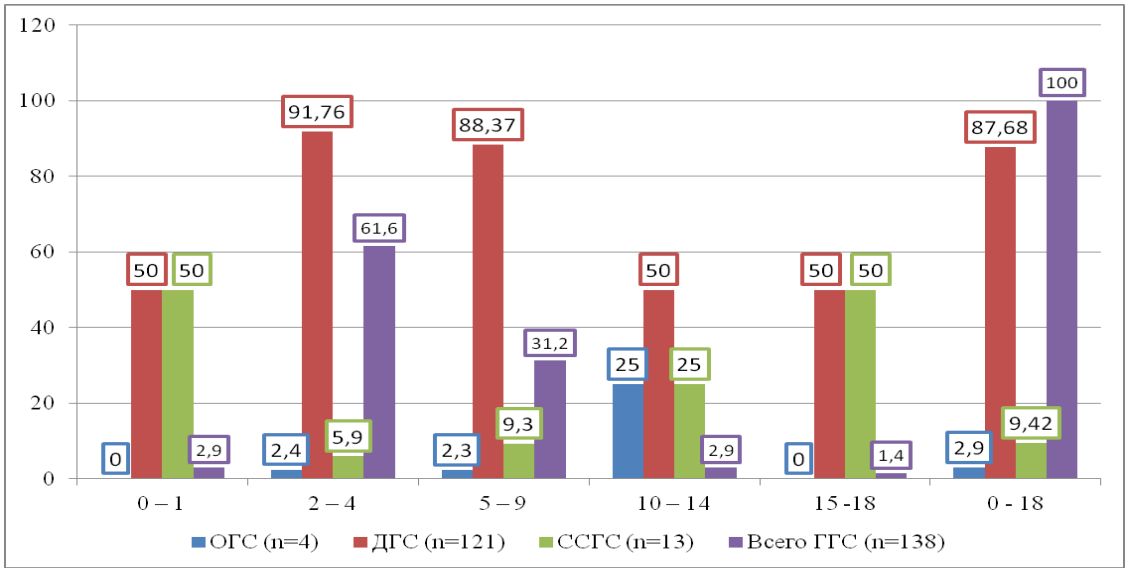

Fig. 1. Epidemiological characteristics of glans hypospadias in children of Fergana

Depending on the age of children, DSH (n = 121) and MSH (n = 13) were characterized by the following prevalence levels, respectively: at 0–1 years old by 50.0% and 50.0%, at 2–4 years old by 91.76% and 5.9% (P < 0.001), at 5–9 years old by 88.37% and 9.3% (P < 0.001), at 10–14 years old by 50.0% and 25.0% (P < 0.005), at 15–18 years old by 50.0% and 50.0%, at the age of 0–18 years by 87.68% and 9.42% (P < 0.001).

In the population of children in Fergana, the prevalence of CH is highest in the 2–4 year (61.6%) and 5–9 year (31.2%) age groups; this form of hypospadias is observed at a significantly low frequency in the 0–4 year (2.9%), 10–14 year (2.9%) and 15–18 year (1.4%) age groups.

Due to age, the frequency of detection of CH in children differs by 60.2% (Xi2 = 20.09; Df = 8; P< 0.05).

Table 2 and Fig. 2 present data on the comparative frequency of prevalence of various forms of proximal hypospadias (PHS).

They show that the incidence rate of proseminal stem hypospadias (PSGS) is: in the group of children aged 0–1 years 12.0%, in the group of children aged 2–4 years 44.0%, in the group of children aged 5–9 years 28.0%, in the group of children aged 10–14 years 12.0%, in the group of children aged 15–18 years 4.0%, in the group of children aged 0–18 years 29.1%.

Comparative frequency of prevalence of various forms of proximal hypospadias in children of Fergana Table 2

Age (years)	Prevalence of proximal hypospadias									
	PSGS (n=25)		TSGS (n=23)		MHS (n=20)		Pr GS (n=18)		Total PHS (n=86)	
	N	%	N	%	N	%	N	%	N	%
0 – 1	**3**	12,0	**2**	8,7	**2**	10,0	**1**	5,6	**8**	9,3
2 – 4	**11**	44,0	**10**	43,5	**11**	55,0	**8**	44,4	**40**	46,5
5 – 9	**7**	28,0	**6**	26,1	**5**	25,0	**6**	33,3	**24**	27,9
10 – 14	**3**	12,0	**3**	13,0	**1**	5,0	**2**	11,1	**9**	10,5
15 -18	**1**	4,0	**2**	8,7	**1**	5,0	**1**	5,6	**5**	5,8
0 – 18	25	29,1	23	26,7	20	23,3	18	20,9	86	100,0
Statistics :χ^2=2,446; Df=12; P >0,05										

Note: • PS GS – proximal stem hypospadias;
• TSGS – trunk-scrotal proximal hypospadias;
• MHS – scrotal proximal hypospadias;
• Pr GS – perineal proximal hypospadias;
• PHS – proximal hypospadias.

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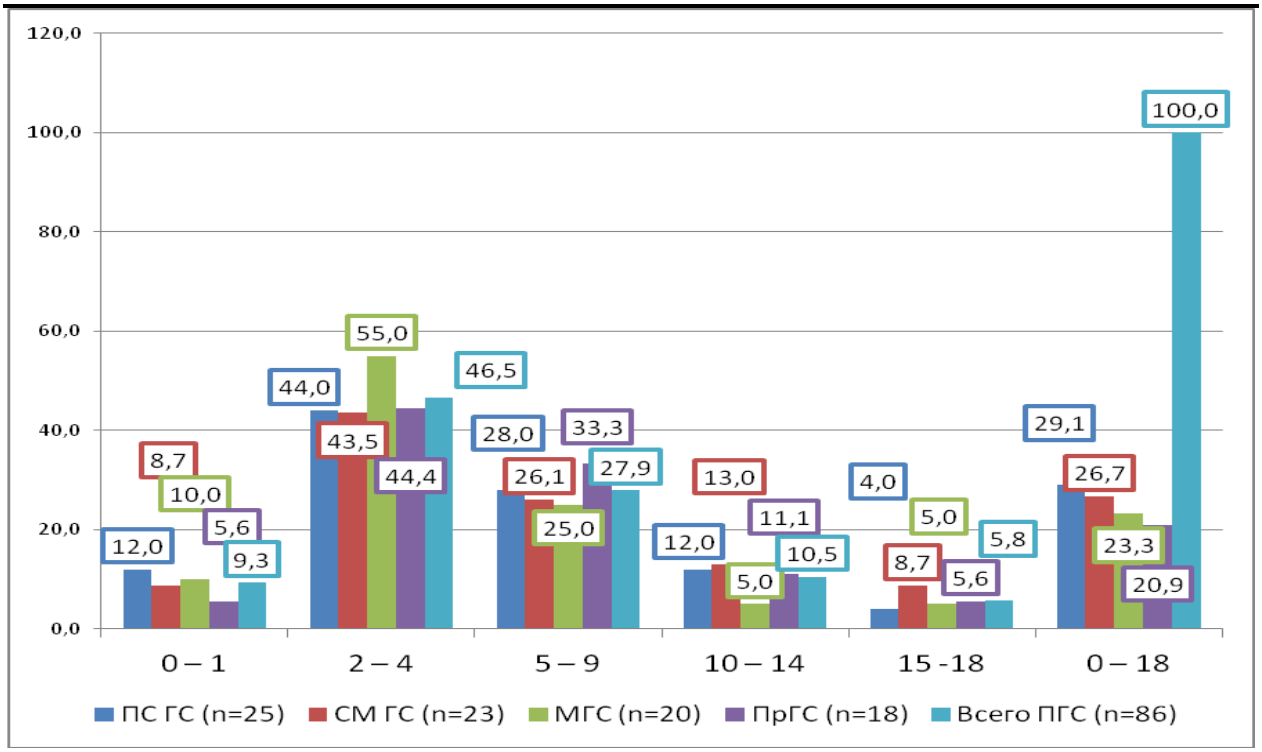

Fig. 2. Epidemiological characteristics of proximal hypospadias in children of Fergana

Proximal scrotal hypospadiac is characterized by the following prevalence rates depending on the age of children in Fergana: 0-1 years 8.7%, 2-4 years 43.5%, 5-9 years 26.1%, 10-14 years 13.0%, 15-18 years 8.7% and 0-18 years 26.7%.

Other forms of hypospadias, MHS and Pr GS, in relation to age were noted with the following prevalence rates: at 0-1 years old by 10.0% and 5.6% ($P<0.05$), at 2-4 years old by 55.0% and 44.4% ($P<0.05$), at 5-9 years old by 25.0% and 33.3% ($P<0.05$), at 10-14 years old by 5.0% and 11.1% ($P<0.05$), at 15-18 years old by 5.0% and 5.6% ($P>0.05$), at 0-18 years old by 23.3% and 20.9% ($P>0.05$).

Our data show that PHS in the population of children in Fergana aged 0–1 years is determined with a prevalence rate of 9.3%, in 2–4 years 46.5%, in 5–9 years 27.9%, in 10–14 years 10.5% and in 15–18 years 5.8%.

High prevalence occurs in the group of children aged 2–4 years and 5–9 years, and in general its prevalence, depending on age, varies by 40.7% ($Xi2 = 2.446$; $Df = 12$; $P> 0.05$).

In this population aged 0–18 years, the prevalence of minimal congenital penile curvature was 42.9%, in the age group 0–1 years 11.1%, in 2–4 years 44.4%, in 5–9 years 33.3%, in 10–14 years 11.1%, in 15–18 years 0.0% (Table 3 and Fig. 3).

Rotation of the penis (VIPChr) depending on the age of children was noted with the following detection rates: 0.0% at 0–1 years, 50.0% at 2–4 years, 25.0% at 5–9 years, 25.0% at 10–14 years, 0.0% at 15–18 years, and 19.0 at 0–18 years.

Comparative frequency of prevalence of individual forms of congenital curvature of the penis in children of Fergana

Table No. 3.

Age (years)	Prevalence of congenital penile curvatures									
	MCP (n=9)		VIPChr (n=4)		UWCdsu (n=4)		PenoTPPF (n=4)		HIV (total) (n=21)	
	N	%	N	%	N	%	N	%	N	%
0 – 1	**1**	11,1	**0**	0,0	**0**	0,0	**0**	0,0	**1**	4,8
2 – 4	**4**	44,4	**2**	50,0	**2**	50,0	**2**	50,0	**10**	47,6
5 – 9	**3**	33,3	**1**	25,0	**1**	25,0	**1**	25,0	**6**	28,6
10 – 14	**1**	11,1	**1**	25,0	**1**	25,0	**1**	25,0	**4**	19,0
15 -18	**0**	0,0	**0**	0,0	**0**	0,0	**0**	0,0	**0**	0,0
0 - 18	**9**	**42,9**	**4**	**19,0**	**4**	**19,0**	**4**	**19,0**	**21**	**100,0**
Statistics: χ^2=NaN; Df=12; P > 0,05										

Note: •MCP – minimal congenital penile curvature;
- VIPChr – penile rotation;
- UWCdsu – urethral wall dysplasia;
- PenoTPPF – penoscrotal transposition of proscrotal and perineal forms.

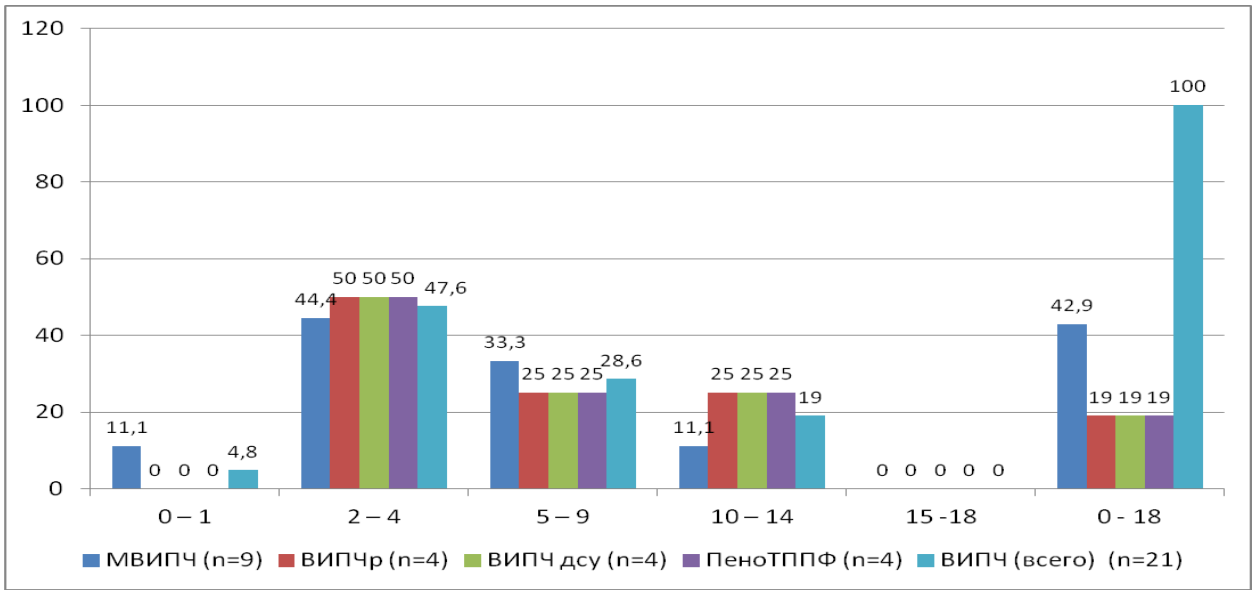

Fig. 3. Epidemiological characteristics of HIV in children of Fergana

Furthermore, the prevalence rates of UWCdsu and PenoTPPF were noted with the following indicators in different age groups of examined children: at 0-1 years old by 0.0% and 0.0%, at 2-4 years old by 50.0% and 50.0%, at 5-9 years old by 25.0% and 25.0%, at 10-14 years old by 25.0% and 25.0%, at 15-18 years old by 0.0% and 0.0%, at 0-18 years old by 19.0% and 19.0%, respectively.

Summarizing this chapter, it should be emphasized that HIV, depending on the age of children in Fergana, is determined with a difference in the prevalence rate of 47.6%. In certain age groups,

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the frequency of detection of HIV is: at 0-1 years 4.8%, at 2-4 years 47.6%, at 5-9 years 28.6%, at 10-14 years 19.0% and at the age of 0-18 years 0.0% (Хи2 = NaN; Df = 12; P> 0.05).

In general, the data on the prevalence of hypospadias in children presented for the first time in the Fergana Valley are extremely important for the development of programs for the prevention of nosological diseases, dispensary observation and prognosis of this pathology.

CONCLUSION

In the population of children aged 0-18 in the Fergana Valley ["Namangan + Fergana + Andijan"] all risk factors (increased number of pregnancies, hormone intake, environmental factors, risk of miscarriage, toxicosis, bleeding, nephropathy, previous infectious respiratory diseases, young or > 40 years of age, co-incidence, twins, low body weight, presence of congenital developmental pathologies, pathology of testicular development, malformations of the urethra), both "maternal" (64.4%) and "Children's" (35.6) are determined with high prevalence levels.

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